

CLAIMS

1. A method for dynamically scheduling communications to a plurality of receivers over a TDMA channel that is partitioned into frames each consisting of slots, comprising the steps of:

5 measuring a channel condition of each receiver;

dividing the receivers into receiver groups according their channel conditions;

partitioning the TDMA channel into a recurring sequence of slots;

dividing each sequence into a certain number of slot groups; and

10 allocating the slot groups to the receiver groups according to the receivers' channel conditions.

2. A method according to claim 1, wherein more slot groups are allocated to the receiver groups having receivers with good channel conditions.

3. A method according to claim 1, further comprising the step of assigning receivers in a receiver group slots in the slot group allocated to the receiver group.

4. A method according to claim 3, wherein more slots are assigned to receivers with better channel conditions.

20 5. A method according to claim 1, wherein the channel condition is indicated by any one of SIR, SNIR, SNR, CI, E/N, FER, BER and DRC.

6. A method according to claim 1, wherein the receivers are grouped based on statistically predicted signal reception conditions.

7. A method according to claim 1, wherein the TDMA channel is implemented on a CDMA channel.

25 8. A method according to claim 1, wherein the receivers are grouped in an equal number.

9. A method according to claim 1, wherein the receivers are grouped based on threshold levels of channel condition.

10. A method according to claim 8, wherein at least one of the upper and lower threshold levels defining a group is changed to try to keep constant the number of receivers in the group.

11. A method according to claim 8, wherein at least one of the upper and lower threshold levels defining a group is changed to try to keep constant an average of the signal reception conditions of the receivers in the group.

12. A method according to claim 1, wherein as a number of receivers in a group increases or decreases, more or less slots are allocated to the group.

13. A method according to claim 1, wherein when a group becomes comprised only of receivers whose current channel conditions are lower than a minimum channel condition, a slot that has been allocated to the group will be made an idle slot.

14. A method according to claim 1, wherein when a group becomes comprised only of receivers whose current channel conditions are lower than a minimum channel condition, a slot that has been allocated to the group will be reallocated to another group.

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15. A method according to claim 1, wherein slots that have been allocated to a group are assigned more favorably to receivers in the group that require higher QoS.

16. A method according to claim 1, wherein the channel condition is measured at a receiver based on a pilot symbol received from the sender.

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17. A method according to claim 1, wherein the channel condition is measured at the sender based on data received from a receiver.

18. A method according to claim 1, wherein a data rate for a receiver is adaptively changed according to the channel condition of the receiver.

19. A method according to claim 1, wherein data to be multicasted to a plurality of receivers in at least one group are not multicasted to the receivers unless all or most of the receivers have channel conditions higher than a predetermined multicast channel condition.

5 20. A method according to claim 1, wherein each receiver is notified of slots assigned thereto and puts itself in a sleep mode during timings of slots assigned to the other receivers.

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